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February, 1930

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Owing to the size and cost, and sometimes limited editions, of a large number of Technical Bulletins, some Statistical Bulletins, some Circulars, and all of the Department's reprints of articles in the Journal of Agricultural Research, these publications are not automatically mailed to persons whose names are entered on the entomological mailing list of the Department (List 256). Announcements on cards of publications falling in the above classes are mailed to all persons on the list. Whenever publications named on them are desired, these cards should be returned promptly, as directed, to the Office of Information. Failure to return any such cards is an indication that the addressee is not interested in the subject matter of the publication and therefore a copy IS NOT MAILED. It is to the interest of persons desiring a complete set of entomological publications of the Department to exercise all possible care in returning these announcement cards, since the stocks of many publications are soon exhausted. Furthermore, the size of the edition is governed to a certain extent by the number of announcement cards returned.

INSECTS AFFECTING MAN AND ANIMALS

F. C. Bishopp, in Charge

F. C. Bishopp left Washington February 3, to attend the meeting of the Southern Agricultural Workers, at Jackson, Miss., February 5, 6, and 7. After this meeting he visited the field laboratories at Tallulah and New Orleans, La., and Sanford and Orlando, Fla., and conferred at Baton Rouge with members of the Division of Animal Industry of the Louisiana State Experiment Station. He returned to Washington February 17.

R. W. Wells, of the field laboratory at Galesburg, Ill., who recently spent several weeks in Washington, left for his return to Galesburg on February 5.

C. L. Whittle, of Peterboro, N. H., editor of Bird Banding, called at the Bureau February 21, and discussed with H. S. Peters, of the field laboratory at Beltsville, Md., the subject of external parasites of wild birds.

TAXONOMY

Harold Morrison, in Charge

Ralph Hopping, of the Division of Entomology, Canadian Department of Agriculture, spent February 2 to 12 studying various types of Coleoptera in the Casey Collection, especially in the group Lepturini. In collaboration with Dr. J. M. Swaine, of that department, he is preparing a review of the North American species in this group.

Mr. David Rockefeller and Dr. F. E. Lutz, Curator of Entomology in the American Museum of Natural History, at New York City, visited the section of Coleoptera February 5 to 7, to consult the Bureau's specialists and to obtain identifications of a collection of beetles made by Mr. Rockefeller.

E. V. Walter, of the Bureau's field laboratory at San Antonio, Tex., called at the taxonomic unit February 4 to consult with several of the specialists.

J. H. Hawkins, of the Maine Agricultural Experiment Station, at Orono, spent February 10 to 21 studying noctuid larvae with the Bureau's specialist, Carl Heinrich.

Dr. Nellie M. Payne, who is associated with the Biological Abstracts, located at the University of Pennsylvania, Philadelphia, called at the taxonomic unit February 11 to consult Dr. A. G. Böving about coleopterous larvae.)

Dr. S. W. Frost, of the department of zoology and entomology, Pennsylvania State College, visited the section of Coleoptera February 11.

D. W. Jones, of the Bureau's corn-borer laboratory at Arlington, Mass., spent some time on February 12 in consultation with the Bureau's specialists in parasitic Hymenoptera regarding parasites of the corn borer.

J. S. Houser, State Entomologist of Ohio, Wooster, Ohio, visited the sections of parasitic Hymenoptera and of mites on February 12 to consult the specialists in the groups named.

G. A. Runner, of the Bureau's corn-borer laboratory at Sandusky, Ohio, called at the section of Hymenoptera February 12 to discuss parasites.

E. R. Leach, of Piedmont, Calif., was in Washington February 17 to 21, consulting with Dr. E. A. Chapin about beetles of the families Lucanidae and Scarabaeidae, of which he is a student.

Frank Johnson, of New York City, spent February 18 in the section of Lepidoptera, studying material in the National collection and consulting with Dr. Schaus.

George G. Ainslie, of the Bureau's cereal and forage insect laboratory at West Lafayette, Ind., who spent the last two months in the taxonomic unit working on the North American Crambidae, has returned to his station.

H. J. Reinhard, of the Texas Agricultural Experiment Station, at College Station, who since January 25, with the assistance of Dr. Aldrich, has been engaged on a study of the North American species belonging to the tachinid genus *Winthemia*, left Washington February 28.

C. N. Ainslie, of the Bureau's cereal and forage insect laboratory at Sioux City, Iowa, spent February 25 to 28 at the Museum. He was particularly interested in examining material in the collections of bees and aculeate wasps, and in securing names for certain species of these groups which he had collected.

COTTON INSECTS

B. R. Coad, in Charge

Thirty-six members of the Southern Agricultural Workers, from five southern States, who were in attendance at their annual convention in Jackson, Miss., February 4 to 7, spent February 8 at Tallulah visiting the offices, laboratories, and airport of the field laboratory. Among the visitors were the entire personnel of the Mississippi State Plant Board.

Dr. F. A. Fenton, in charge of the field laboratory at El Paso, Tex., spent several days at Tallulah in conference with B. R. Coad on work on the pink bollworm in the Southwest, and returned to El Paso on February 12.

T. P. Cassidy, in charge of the field laboratory at Tucson, Ariz., spent the first half of February at Tallulah in conference with B. R. Coad on investigations of the pink bollworm and *Thurberia* weevil in Arizona, and returned to Tucson February 17.

L. W. Noble, Junior Entomologist, who has been a member of the force at Tallulah since his appointment in September, 1929, has been transferred to El Paso for work on the pink bollworm, and left Tallulah February 12.

TRUCK-CROP INSECTS

J. E. Graf, in Charge

P. N. Annand, formerly in charge of the sugar-beet leafhopper laboratory at Davis, Calif., has been transferred to Twin Falls, Idaho.

K. L. Cockerham and O. T. Deen, Biloxi, M. Brunson and L. B. Reed, Picayune, and F. A. Wright, Bay St. Louis, all in Mississippi, attended the meetings of the Cotton States Entomologists at Jackson, Miss., February 5 and 6.

N. F. Howard, Columbus, Ohio, was in Washington February 8 to 21, to assist in miscellaneous work on manuscripts, including a revision of Farmers' Bulletin 1407, on the Mexican bean beetle, and a new manuscript on the Mexican bean beetle, prepared by L. W. Brannon and himself, to be published by the Virginia Truck Experiment Station.

On February 11, while in Washington, N. F. Howard discussed the control of the Mexican bean beetle with E. N. Cory, State Entomologist of Maryland, L. M. Peairs, head of the Department of Entomology, West Virginia Agricultural Experiment Station, and C. O. Eddy, of the Department of Zoology and Entomology of the South Carolina Agricultural Experiment Station.

N. F. Howard attended a school for canners held on February 20 at the University of Maryland, College Park, where he took part in a discussion on the Mexican bean beetle.

On February 8 M. C. Lane, in charge of the field laboratory at Walla Walla, Wash., gave an informal talk at the Young Farmers' Conference at Yakima, Wash., on the latest developments in the control of wireworms in the Yakima Valley.

On February 13 G. Allen Mail, Assistant Entomologist of the Montana Agricultural College and Experiment Station, visited the field laboratory at Walla Walla, Wash., and conferred with M. C. Lane regarding the possibility of undertaking cooperative work on wireworms in the State of Montana.

On February 14 M. C. Lane visited the Experiment Station officers of Idaho and Washington at Moscow, Idaho, and Pullman, Wash., in the interest of the present season's work on wireworms in those States.

L. U. Brannon, of the field laboratory at Norfolk, Va., visited Washington February 21, to confer with N. F. Howard and others regarding the coming season's investigations on the Mexican bean beetle.

On February 21 the field laboratory at Biloxi, Miss., was visited by five officials of the State Plant Board of Mississippi, these being Dr. L. E. Miles, Pathologist, J. M. Langston, Entomologist, and three Inspectors, R. P. Colmer, H. Gladney, and Henry Deitrich, located respectively at Moss Point, Ocean Springs, and Lucedale. On February 25 the same field laboratory had as a visitor C. E. Smith, in charge of the field laboratory at Baton Rouge, La.

O. E. Gahm, Arlington Farm, Va., and J. S. Houser, Chief Entomologist, Agricultural Experiment Station, Wooster, Ohio, visited Lima, Ohio, on February 24, where Mr. Gahm gave an informal talk before mushroom growers of Ohio on the control of mushroom pests. Mr. Gahm also visited mushroom plants at Urbana, Barberton, Napoleon, and Marblehead, Ohio, returning to Washington on February 26.

DECIDUOUS-FRUIT INSECTS

A. L. Quaintance, in Charge

Oliver I. Snapp attended the meetings of the Cotton States Entomologists at Jackson, Miss., on February 6 and 7, where he discussed the results of spraying and dusting experiments on large blocks of peach trees. After the meetings he visited the Delta Laboratory, for the study of cotton insects, at Tallulah, La., Mr. Snapp has been reelected secretary-treasurer of the Cotton States Branch of the American Association of Economic Entomologists.

On February 10 F. H. Lathrop, W. P. Yetter, jr., G. A. Runner, E. J. Newcomer, L. B. Smith, W. E. Fleming, H. W. Allen, J. L. King, J. W. Lipp, Luther Brown, and E. H. Siegler attended conferences on the codling moth and oriental peach moth. These gentlemen have since returned to their usual duties. Dr. Lathrop spent the greater part of February in Washington, preparing manuscripts on the results of his field investigations.

Contributions from the Japanese-Beetle Laboratory

On February 6 E. J. Newcomer, in charge of the field laboratory for the study of apple insects at Yakima, Wash., visited the Japanese-Beetle Laboratory. Mr. Newcomer spent the day talking with entomologists on insecticide problems and looking over the laboratory equipment.

Arthur Gibson, Entomologist of the Dominion of Canada, and Dr. T. J. Headlee, State Entomologist of New Jersey, visited the Japanese-Beetle Laboratory on February 15.

CEREAL AND FORAGE INSECTS

W. H. Larrimer, in Charge

The annual conference of Federal and State administrative officials, scientists, and others, on the research program for the control of the European corn borer was held at the Department of Agriculture in Washington, D. C., February 11. The complete research program for the year, and reports of several committees on important phases of the work, were presented and considered. The purpose of this meeting, as heretofore, was to provide for a complete coordination of the various projects, both Federal and State, for research on the corn borer, to arrange for desirable replication of experiments, and to prevent unnecessary duplication of experimental work. It was further intended to have this direct contact with the program for research on the corn borer afford an opportunity for administrative review and constructive criticism, to the end that the program should each year be in every respect as complete and satisfactory as possible.

Dr. J. R. Parker, in charge of the field laboratory at Bozeman, Mont., spent the latter half of February in Washington in consultation regarding grasshopper investigations.

Thomas P. Strand has been appointed Junior Entomologist, effective February 11, for duty at Sandusky, Ohio.

L. P. Rockwood wishes to secure a supply of lepidopterous larvae killed by the fungus disease Botrytis rileyi. This disease is not known to occur in the coast region of western Oregon and, since it is an important factor in bringing under control the outbreaks of several species of caterpillars in various locations in the South, Mr. Rockwood is anxious to establish the disease in western Oregon, where conditions seem to be favorable for its development. Various species of insects are affected by the disease, including the army worms and the velvet-bean caterpillar. The disease may be recognized by the dead larvae being so coated with green spores that they appear as if dusted with Paris green. If such larvae are observed and mailed to Mr. Rockwood, at Forest Grove, Oreg., the cooperation will be very much appreciated. The best way to send these larvae is in a cardboard container, or individually in small vials plugged with cotton. If air-tight containers are used, secondary bacterial infection is likely to destroy the fungus. All shipments should be mailed direct to Mr. Rockwood, together with a letter of notification as to what may be expected.

C. N. Ainslie, of the Sioux City, Iowa, field laboratory, recently spent a few days in the Washington Office, while on vacation.

F. C. Bishopp, in charge of investigations of insects affecting man and animals, visited the field laboratory at New Orleans, La., February 11.

FOREST INSECTS

F. C. Craighead, in Charge

On February 27 William Middleton, of this Division, and Dr. Floyd F. Smith, of the Division of Cereal and Forage Insects, visited Leesburg, Va., to demonstrate the fumigation control of the boxwood leaf miner, with which they have been experimenting for several years. The demonstration was conducted at the request of Mr. Lintner, County Agent of Loudoun County, who has succeeded in arousing in that county a great deal of interest in boxwood and in the control of the leaf miner.

On February 21 R. A. St. George received a report from S. R. Broadbent, Supervisor of the Unaka National Forest, with headquarters at Bristol, Tenn., that an outbreak of the southern pine beetle has been located along Scioto Creek. The attack of the beetle was made last fall, and the overwintering brood was recently discovered. This information is of particular interest, since similar attacks in the French Broad Division of the Pisgah National Forest and adjoining tracts also occurred last fall, and have now resulted in heavy broods of this beetle. The trees in both forests along the boundary between western North Carolina and eastern Tennessee were probably attacked at about the same time. The low temperatures of November 29 and 30, 1929, were effective in killing the brood that remained between the bark and the wood, but the more developed brood that had penetrated the outer bark escaped being affected. Unless zero temperatures are experienced in March, or excessive rainfall occurs this spring, there is apt to be a rather heavy emergence of the beetles early in the summer.

Contributions from the Gipsy-Moth Laboratory

T. H. Jones and I. T. Guild, of the Gipsy-Moth Laboratory, attended a meeting of the Northeastern Forest Research Council, at Springfield, Mass., on February 1.

A large shipment of cocoons of the oriental hag moth, Cnidocampa flavescens Walk., reached the Gipsy-Moth Laboratory on February 13. The shipment consisted of approximately 779,000 cocoons collected in Fuji and Aikawa, Japan, under the direction of T. R. Gardner, of the Bureau's Japanese and Asiatic Beetle Investigations. Over 600 Japanese school children participated in the collecting, and Mr. Gardner writes that examination of sample lots of cocoons showed that nearly 50 per cent contained larvae of the tachinid parasite Chaetexorista javana B. & B. It is hoped that the liberation of adults of this parasite made last year in infestations of Cnidocampa flavescens in the vicinity of Boston, together with those which it should be possible to make this year, will result in its establishment.

BEE CULTURE

Jas. I. Hambleton, in Charge

W. J. Nolan attended the Extension School of the Department of Horticulture of West Virginia University, at Inwood, W Va., on February 10, and gave a talk on "The use of bees in orchards for pollinating purposes." It is noticeable that fruit growers are giving more attention to the artificial control of pollination in orchards by the use of honeybees than they ever have given in the past. At the present time many of the producers of package bees are making arrangements to furnish exclusively package bees for purposes of pollination.

Dr. E. F. Phillips, of Cornell University, visited the Bee Culture Laboratory on February 20. He was in Washington to testify before the House Committee on Agriculture, which held a hearing on H. R. 9760.

Dr. L. R. Watson, of Alfred, N. Y., formerly connected with the Division of Bee Culture Investigations, visited the Laboratory on February 14. Doctor Watson is making investigations on the chemical analyses of beeswax, and while in Washington consulted with various workers in the Bureau of Chemistry and Soils.

Judging from the correspondence received at the Division of Bee Culture Investigations, beekeepers all over the country are much interested in assisting the census enumerators in compiling complete statistics on bees and honey for the forthcoming census. Some of the State associations contemplate appointing committees to assist the census enumerators. A very comprehensive list of beekeepers in California, arranged by counties, with the address and number of colonies of each individual, has just been received from the California State Department of Agriculture. A list of this kind should prove invaluable to the census enumerators, and if other States would compile similar lists the Bureau of the Census would have little difficulty in giving accurate figures concerning the size and importance of the beekeeping industry in this country.

W. J. Nolan has just attended the Southern States Beekeepers' Conference held at Baton Rouge, La., February 26 to 28, and reports a splendid meeting, with representatives present from 17 States. Mr. Nolan spoke on "Federal work of aid to the beekeeper." Dr. Warren Whitcomb, jr., and Dr. E. Oertel, of the Southern States Bee Culture field laboratory, also addressed the meeting, their respective topics being "Standardization of shipping cages for package bees," and "The number of egg tubules in the queenbee." Dr. E. F. Phillips, George S. Demuth, and Kenneth Hawkins, all formerly connected with the Bee Culture Laboratory, were present and appeared on the program. Dr. H. E. Barnard, President of the American Honey Institute, gave a talk on the nutrition of children, with special reference to honey. The next meeting of the Southern States Beekeepers' Conference will be held at Montgomery, Ala.

On a recent trip to the Pacific Coast Jas. I. Hambleton stopped at the Oregon Agricultural College, at Corvallis, and at several branches of the University of California, as well as at a number of high schools and junior colleges, all of which are vitally interested in the future of beekeeping research, and have offered the Department of Agriculture excellent facilities and accommodations for carrying on research at their respective institutions. The exact location for a research laboratory on the Pacific Coast has not been selected. Cooperation on the part of beekeepers is assured, and a number of the county associations as well as individual beekeepers have offered the use of their apiaries and other facilities for investigational work.

Frank C. Pellett, field editor of the American Bee Journal, Hamilton, Ill., another recent visitor at the laboratory, was in Washington in the interest of pure-food legislation. Mr. Pellett, who is well known in beekeeping literature, was greatly pleased with the library of this division, and promised to donate several important publications which the Department of Agriculture does not now possess.

At the annual convention of the American Honey Producers' League, held in Milwaukee, Wis., February 4 to 6, a resolution was adopted asking the Department of Agriculture to appoint extension specialists in apiculture. The Association of Apiary Inspectors of America, which held its annual meeting at the same time, adopted a resolution requesting that reports on the occurrence and distribution of American foulbrood, and the progress made in its eradication, be included in the Insect Pest Survey. As soon as the machinery is perfected for reporting the findings on American foulbrood to the Insect Pest Survey the information should be very helpful in giving a clear-cut picture of the situation as to bee diseases in the United States, and enable the industry to see what progress is being made.

STORED-PRODUCT INSECTS

E. A. Back, in Charge

W. D. Reed, of the field laboratory at Fresno, Calif., went to Indio, Imperial Valley, on February 5 to advise and make fumigation tests for the Deglet Noor Date Growers Association. The delivery of dates begins about September 5 and lasts until about January 1. All dates are fumigated on receipt at the packing house, and most of them are again fumigated just before shipment.

On February 5 and 6 Dr. Back attended the convention of the National Retail Dry Goods Association, held at the Hotel Pennsylvania in New York City.

Dr. R. T. Cotton spent February 9 to 11 in Buffalo, N. Y., where opportunity was given him to check results of fumigations at the establishments of Larkin & Company and the Hecker H-O Cereal Company.

A. O. Larson, of the bean-weevil field laboratory, Modesto, Calif., arrived in Washington on February 14, for consultation and work on manuscripts. In his absence C. K. Fisher is in charge of the laboratory.

Dwight K. Grady, Secretary of the Dried-Fruit Association of California, visited the Bureau on February 17 and spoke very highly of the work being done at the Fresno laboratory.

Among the visitors to the Division in February may be mentioned A. H. Eustis, of the Virginia Smelting Company, Norfolk, Va., Harry H. Steidle, of the Division of Trade Standards of the Bureau of Standards, Department of Commerce, Theodore Myer, Jr., of the Theodore Myer Estate, Philadelphia, Dr. William Moore, of the American Cyanamid Sales Co., New York City, E. T. Ladd, of the Isco Chemical Co., Niagara Falls, N. Y., Mr. Wall, of the Kaskelite Manufacturing Corp., Chicago, and Dr. Hugo Hartnack, of Chicago.

In February George B. Wagner, of the laboratory for the study of stored-grain insects, Manhattan, Kans., conducted experiments on fumigation in Kansas City, Mo.

Perez Simmons, in charge of the field laboratory at Fresno, Calif., for the study of dried-fruit insects, writes that the periodical exchange which he started last year has been reorganized for 1930. This year 16 laboratories of the Bureau on the Pacific Coast are cooperating. "There are 446 numbers, of 35 periodicals, in the exchange. Assuming that but one man at each station to which a periodical is sent reads it, the exchange will be equivalent to 1,047 individual loans of periodicals."

LIBRARY

Mabel Colcord, Librarian

NEW BOOKS

The Bee Kingdom, a monthly review of modern bee culture. v. 1, No. 1, Jan., 1930, illus. Cairo, Egypt, Al-Ausour Publishing House, 1930. (Founded and edited by A. Z. Abushady. In English and Arabic.)

Bergemann, H.

. . . Over Schildluizen van de Koffie. 54 p., illus. Batavia, Ruygrak & Co., Dec., 1929. (Mededeelingen van het Proefstation Malang No. 71.) (Archief voor de Koffiecultuur in Nederlandsch-Indie, Jahrg. 3, Nr. 3, p. 113-166, illus., Dec., 1929.)

Blaisdell, J. G.

. . . Exercise and review book in biology. A combined laboratory guide and review book for students' use. 152 p., illus. New York, World Book Company, 1917. (New World Science Series.)

Bodemeyer, Bodo V.

Ueber meine entomologischen Reisen nach Klein-Asien (1911), Ost-Sibirien, Schilka und Amur (1912), Tunis, Oasis Gafsa, Khroumerie (1913) und Iran, das Elbursgebirge (1914)... 79 p., illus. Stuttgart, Alfred Kern, 1927.

Bodenheimer, F. S.

Materialien zur Geschichte der Entomologie bis Linné. Bd. II (486 p.) illus. Berlin, Junk, 1929.

Bouquet, A. G. B.

Cauliflower and broccoli culture . . . 125 p., pl. New York, Orange Judd Publishing Company, Inc.; London, Keegan Paul, Trench, Trübner & Co., Ltd., 1929. (References, p. 122-123.) (Insects and diseases, p. 55-56.)

Busck, August, and Dampf, A.

. . . Una palomilla (Stenoma crarbina Busck) como una nueva plaga del algodón en el estado de Oaxaca . . . 55 p., illus., col. pl. Tacuba, D. F., Mexico, Sec. de Agr. y Fomento, 1929. (Mexico. Sec. de Agr. y Fomento. Oficina Federal para la Defensa Agrícola Estudios Num. 2.) (Literatura citada, p. 54-55.)

Campos, Francisco.

Un año a caza de criaderos de mosquitos por los pantanos de Guayaquil y alrededores . . . Guayaquil, 1929. Revista del Colegio Nacional Vicente Rocafuerte, Año XI, Nums. 36-37, p. 17-62, 1929.

Estable, Clemente.

Observaciones sobre algunos insectos del Uruguay. Anales del Museo de Historia Natural de Montevideo, Ser. II. Tomo III, Entr. 1, p. 57-92, 1929.

Faure, Jacobus.

. . . The South African citrus thrips [Scirtothrips aurantii n. sp.] and five other new species of Scirtotrips Shull. 18 p., 3 pl. Pretoria, Wallachs Limited, Dec. 20, 1929. (Transvaal University College, Pretoria. Fac. Agr. T. U. C. Bul. 18.)

Frisch, Karl v.

Über den Geruchssinn der Biene und seine blütenbiologische Bedeutung. 238 p., illus. Jena, Fischer, 1919. Sonderabdruck aus "Zoologische Jahrbücher" Abt. f. allg. Zool. u. Physiol., Bd. 37. (Literaturverzeichniss, p. 220-225.)

Holloway, T. E.

Sugar cane insects of North America and the West Indies (excluding Cuba). A bibliography and list of known parasites, insect predators and diseases. 38 p. Sourabaya, Java, 1929. (Third Internat. Conference of the Internat. Soc. of Sugar cane Technologists, Bul. 5.)

Knott, J. E.

Vegetable growing. 352 p., illus. Philadelphia, Lea & Febiger, 1930. (Insect and disease control, p. 159-180.)

Munro, J. W.

Insects and industry. 82 p. London, Ernst Benn, limited, 1929. (Benn's Sixpenny Library No. 95.) (Bibliography, p. 79-80.)

Pennington, C. E.

List of bulletins of the agricultural experiment stations for the calendar years 1927 and 1928. 78 p. Washington, D. C., Government Printing Office, Jan. 1930. (U. S. Dept. Agr. Miscellaneous Pub. 65.)

Petit, G.

Contribution à l'étude de la faune de Madagascar, pt. II. Paris, Société d'éditions géographiques, maritimes et coloniales, 1929. (Faune des colonies françaises, t. III, fasc. 4, p. 269-636, pl. IV-VII).

Society of American Bacteriologists.

Bergey's Manual of determinative bacteriology . . . a key for the identification of organisms of the class Schizomycetes, by David H. Bergey . . . with an index by Robert S. Breed. Ed. 3. 589 p. Baltimore, Williams and Wilkins Company, 1930.

Verlaine, L. J. A.

L'instinct et l'intelligence chez les hyménoptères. pt. 1. Bruxelles, Lammertine 1924. (Académie Royale de Belgique. Classe des sciences. Mémoires. Collection in 8°, tome VIII, fasc. 2.)

Ward, J. M.

Plum and prune culture. 86 p. illus. Melbourne, Gov't Printing Office, 1926. (Victoria Dept. Agr. Bul. new ser. No. 57.)

Williams, C. B.

Evidence for the migration of butterflies. Soc. Roy. Ent. d'Egypte new ser. Ann. 1929, fasc. 1, p. 193-210.

AN APPARATUS FOR REARING INSECTS UNDER CONTROLLED CONDITIONS

A paper has recently appeared which, it is believed, is of sufficient interest and importance to be brought to the attention of all workers in the Bureau of Entomology who desire to rear insects under controlled conditions made as nearly natural as possible. It is by G. U. Escherich, and is entitled "Ein Multipler Thermohygrostat mit ständiger Lüfterneuerung [A battery of constant temperature and humidity chambers with continuous renewal of air], and was published in *Anzeiger für Schadlingskunde* 6: 13-14, 1930. A free translation, somewhat abbreviated, of this paper follows:

For the determination of the relations between temperature, humidity, and development of insects, batteries of incubators have usually been employed. The temperature gradient incubator of Williams and Kirkpatrick (*Min. Agr. Egypt, Bul.* 38, 1924) has also been used. These incubators have faults which often render exact experimentation difficult; for example, lack of ventilation, of light, and of constant humidity. The requirements of a good incubator for rearing insects are as follows: (1) Constant temperature, (2) sufficient ventilation, (3) illumination from all sides, (4) constant humidity throughout the chamber.

The principles of a new incubator that meets these requirements are presented here. A motor-driven blower forces air through a compartment where it is heated to the desired temperature. On leaving the heater, the air stream is divided, one part passing through a dryer and the other through a humidifier. Both streams then pass into the rearing chamber. The rate of flow of each air stream can be controlled by a stopcock. The relative humidity of the rearing chamber therefore depends on the relative proportions of the wet and the dry air that are allowed to enter it. By properly setting the stopcocks, any desired relative humidity can be maintained throughout the rearing chamber.

The rearing chamber can be opened for the renewal of food with little change in temperature and humidity, which very quickly return to their former values.

The external heating system makes it possible to use a glass rearing chamber, transmitting ultraviolet light if necessary. The writer uses an unsilvered, double-walled glass vessel shaped like a bell jar. The space between the two walls is evacuated for insulation. This vessel stands on cork board. Tubes passing through the cork board admit the air to the upper part of the vessel. The air escapes at the bottom through a short tube in the cork board.

A battery of these rearing chambers can be supplied with air by a single blower. Different temperatures in the different chambers can be obtained either by cooling portions of the air from a single heater or, better, by using a single heater for each temperature. A thermometer and hygrometer are placed in each chamber.--F. L. C.

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BUSINESS ADMINISTRATION

Purchases In Excess of Fifty Dollars

Attention is called to the matter of purchases made in the open market in excess of \$50 without first securing competitive bids. It should be borne in mind that the Bureau of Entomology is prohibited by statute from making such purchases without securing competitive bids, except as provided in paragraphs 63 to 68, inclusive, of the Fiscal Regulations of the Department. Any employee contemplating such emergency purchases should first place the matter before the Washington office of the Bureau for approval and instructions, using the telegraph when necessity requires immediate consideration. Ordinarily, needs may be foreseen sufficiently in advance to allow for competition. Delaying purchases in field offices until the need arises is not considered by the Department or the General Accounting Office as constituting an emergency, and vouchers in payment of such purchases are subject to disallowances.

In cases where plans can not be made and needs anticipated sufficiently in advance to allow for the handling of bids through the usual channels, officials in charge of field stations are authorized to invite bids. Such bids after opening should be forwarded to Washington with recommendations for making the award. (See par. 73).

In the solicitation of bids for supplies and services:

1. The proper standard form should be employed.
2. Definite and impartial specifications are to be used, stating accurately the quantity and kind of article required. The practice of calling for an article by name followed by "or equal" should be discontinued where it is at all possible to describe the article.
3. Federal specifications are to be used wherever applicable. If Federal specifications appear impracticable the Washington office should be advised accordingly.
4. In seeking quotations the specifications should show the needs rather than allow the bidder to indicate what he proposes to furnish. This is not intended to prevent the giving of the general description of the article desired and then allow the bidder to describe what he has to offer.
5. Specifications must include definite place of delivery and, where essential, specify time for delivery, or provide for bidder to indicate time within which he will make delivery.

6. Care should be exercised to see that purchases conform to trade usage and do not call for specially made articles when stock articles are regularly manufactured and will serve the purpose.
7. Specifications must call for discounts for prompt payment within a specified number of days after receipt of goods or after invoice.
8. Proposals must be sent out to give bidder most remotely located ample time to prepare his bid and submit it in time for opening.
9. From the time the Washington office has been requested to solicit bids, all negotiations with bidders, until award is made, must be through this office. This is necessary in order that all bidders will be on a comparative basis. Bids resulting in prices less than \$50 should be recommended for award the same as other bids.
10. The Comptroller General has laid down the principle that in the purchase of new equipment involving more or less restrictive features, the specifications must reflect service requirements necessitating such features. It is not sufficient that reasons for rejecting the bids be expressed in the recommendation, unless the bidders have been put on notice of service requirements in the specifications that these features are required. The failure to carefully observe these requirements may make it necessary to readvertise, thus causing considerable delay.
11. In securing bids for supplies over a period in an indefinite amount such as coal, fuel, oil, etc., the Comptroller General has decided that it is necessary to estimate the quantity in all instances, and, in order to secure mutuality of consideration in the contract, bind the Department to purchase within a reasonable percentage variance from the estimated quantity, or bind the Department to purchase exclusively from the contractor so much as is required in the opinion of the ordering officer.

Failure to observe all the foregoing points in connection with the invitation of bids in the field may result in the cancellation of all bids, and necessitate readvertising with consequent delay.

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Gasoline Tax Exemption Procedure in Various States

The following list of States have arranged to grant Government employees exemption from payment of the State tax on gasoline where procured for use in Government owned motor vehicles: Arizona, California, Florida, Idaho, Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana (State Board of Equalization, Helena), Nebraska, New Jersey, New York, New Mexico, Oklahoma, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Washington, West Virginia, Wisconsin.

The exemptions are ordinarily granted through certificate forms procurable from the State Auditor or other State officer, and the exemption is supposed to be granted by all retailers as well as producers and distributors. Employees of the Bureau who purchase gasoline in any of the above enumerated States, should immediately make a request on the State Auditor or other State officer for a supply of the proper certificates to be used when purchasing gasoline. The procedure in securing exemption from the payment of the tax will possibly vary in the different States, and it is suggested that when the certificates are obtained, the exact procedure to be followed in securing exemption be ascertained. If the employee is successful in securing exemption, a statement to that effect should be placed on the voucher; however, if the retailer refuses to grant exemption, the voucher should be submitted in duplicate as is the present practice, and a statement made that the dealer refused to grant the exemption. There is absolutely no change in submitting accounts covering the purchase of gasoline from the present practice with the exception that the above enumerated States have agreed to cooperate with the Government and furnish tax exemption certificates. The exact procedure now in effect covering the purchase of tax exempt gasoline, and gasoline on which the tax was paid, should be closely followed.

Since identification of the employee as an official of the Department will be necessary in all cases, the regular Department identification card, par. 722, Administrative Regulations, should be carried for that purpose unless a special form is required by the State.

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Appointments of Temporary Field Assistants

The approach of the active field season, with the demand which it will bring for the employment of Temporary Field Assistants, makes this an opportune time to again call the attention of the field officers to the importance of making their recommendations for such appointments as far in advance as possible. After a recommendation is received in the Washington office, it requires a period of approximately two weeks to get approval from the Civil Service Commission.

The Commission will continue to insist, as in the past, that it be furnished in each individual case with definite and complete information regarding the work to be performed and the education and experience of the proposed appointee. Education should include common school, high school, and college training. Where the individual has had college training, it is necessary to show the name of the institution attended, the number of years in attendance at the institution, and the major course or courses pursued. In the absence of college training, it is necessary to show that the applicant has had practical experience in the line of work involved in the specific position or in some related line, or similar experience of equal value. Exact dates should be given where possible.

It is extremely important that the training and experience of an individual should warrant the salary recommended.